

# Safety Instructions

## **Deltapilot M**

### **FMB50, FMB51, FMB52, FMB53**

#### **4-20 mA HART, PROFIBUS PA, FOUNDATION Fieldbus**

Ex ic IIC T6...T4 Gc

IECEX KEM 09.0016

Document: XA00493P-B

Safety instructions for electrical apparatus for explosion-hazardous areas  
according to IEC standards

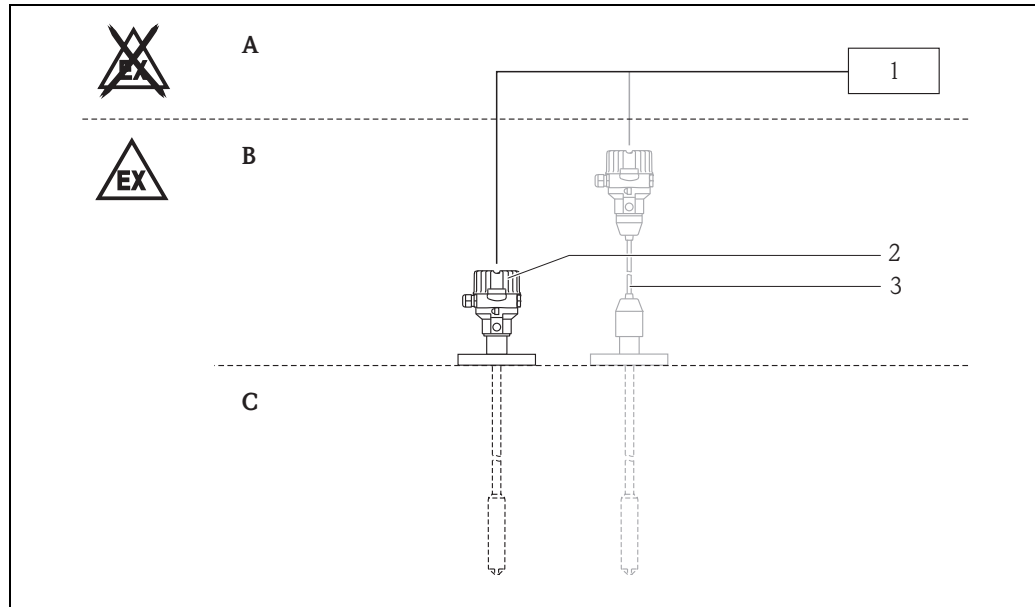


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|                             |   |    |    |     |            |
|-----------------------------|---|----|----|-----|------------|
| Associated Documentation    | <p>This document is an integral part of the following Operating Instructions:<br/>BA00382P/00</p> <p>The Operating Instructions which are supplied and correspond to the device type apply.</p> |    |    |     |            |
| Supplementary Documentation | <p>Explosion-protection brochure:<br/>CP00021Z/11</p>   |    |    |     |            |
| Designation                 | <p>Explanation of the labelling and type of protection can be found in the explosion protection brochure.</p>   |    |    |     |            |
|                             | Designation according to IECEx<br>Equipment protection level (EPL)  | Gc |    |     |            |
|                             | Designation of type of protection/<br>level of protection   | Ex | ic | IIC | T6...T4 Gc |
| Applied standards           | <p>IEC 60079-0 :2011<br/>IEC 60079-11 :2011</p>   |    |    |     |            |

## Safety instructions: Installation



**A** Power supply

**B** Zone 2, Electronic

**C** Zone 2, Process

**1** Certified associated apparatus

**2** FMB50, FMB51, FMB52, FMB53

**3** Option FMB50, FMB51, FMB52: Separate housing

- Comply with the installation and safety instructions in the Operating Instructions.
- Install the device according to the manufacturer's instructions and any other valid standards and regulations.
- Only install the devices in media for which the wetted materials have sufficient durability.
- Avoid electrostatic charging of the plastic surfaces, for plastic process connections or plastic coatings.
- The intrinsically safe input power circuit of the device is isolated from ground potential and has a dielectric strength of at least 500 V<sub>rms</sub> with respect to it.
- Avoid impact or friction sparks for light metal flanges or flange faces (e.g. titanium, zirconium).
- In case of additional or alternative special varnishing of the enclosure or other metallic parts the danger of an electrostatic charging must be observed. Do not rub surfaces with dry cloth.

### FMB51

- Mechanically fix rod probes which are more than 3 m (e.g. using guy ropes).

### FMB52, FMB53

- Avoid electrostatic charging of the cable.
- Secure probes against swinging.

## Service connection

- For service operations the Commubox FXA191 or FXA195 (from Endress+Hauser) can be connected to the display socket.
- Comply with the safety instructions of the Commubox.

## Temperature tables

| Type         | Type of protection/<br>level of protection | Temperature class | Process temperature | Ambient temperature<br>(Housing) |
|--------------|--|-------------------|---------------------|----------------------------------|
| <b>FMB50</b> | Ex ic IIC T6...T4 Gc                       | T6                | ≤ 80 °C             | -40 °C ≤ Ta ≤ +40 °C             |
|              |  | T4                | ≤ 100 °C            | -40 °C ≤ Ta ≤ +70 °C             |

The process temperatures refer to the temperature at the separation membrane  
(do not exceed the max. ambient temperature at the housing).

| Type         | Type of protection/<br>level of protection | Temperature class | Process temperature | Ambient temperature<br>(Housing) |
|--------------|--|-------------------|---------------------|----------------------------------|
| <b>FMB51</b> | Ex ic IIC T6...T4 Gc                       | T6                | ≤ 80 °C             | -40 °C ≤ Ta ≤ +40 °C             |
|              |  | T4                | ≤ 85 °C             | -40 °C ≤ Ta ≤ +70 °C             |

The process temperatures refer to the temperature at the rod  
(do not exceed the max. ambient temperature at the housing).

| Type         | Type of protection/<br>level of protection | Temperature class | Process temperature | Ambient temperature<br>(Housing) |
|--------------|--|-------------------|---------------------|----------------------------------|
| <b>FMB52</b> | Ex ic IIC T6...T4 Gc                       | T6                | ≤ 80 °C             | -40 °C ≤ Ta ≤ +40 °C             |
|              |  | T4                | ≤ 80 °C             | -40 °C ≤ Ta ≤ +70 °C             |

The process temperatures refer to the temperature at the cable  
(do not exceed the max. ambient temperature at the housing).

| Type         | Type of protection/<br>level of protection | Temperature class | Process temperature | Ambient temperature<br>(Housing) |
|--------------|--|-------------------|---------------------|----------------------------------|
| <b>FMB53</b> | Ex ic IIC T6...T4 Gc                       | T6                | ≤ 80 °C             | -40 °C ≤ Ta ≤ +40 °C             |
|              |  | T4                | ≤ 80 °C             | -40 °C ≤ Ta ≤ +70 °C             |

The process temperatures refer to the temperature at the cable  
(do not exceed the max. ambient temperature at the housing).

## Connection data

| Electronic insert                | Electrical data  |
|----------------------------------|--|
| 4-20 mA HART                     | $U_i \leq 45 \text{ V DC}$<br>$I_i \leq 300 \text{ mA}$<br>$P_i \leq 1 \text{ W}$<br>$C_i \leq 10 \text{ nF}$<br>$L_i = 0$   |
| PROFIBUS PA, FOUNDATION Fieldbus | $U_i \leq 17.5 \text{ V DC}$<br>$I_i \leq 500 \text{ mA}$<br>$P_i \leq 5.5 \text{ W}$<br>$C_i \leq 5 \text{ nF}$<br>$L_i \leq 10 \text{ } \mu\text{H}$<br>(FISCO field device)<br>or<br>$U_i \leq 32 \text{ V DC}$<br>$I_i \leq 250 \text{ mA}$<br>$P_i \leq 1.2 \text{ W}$<br>$C_i \leq 5 \text{ nF}$<br>$L_i \leq 10 \text{ } \mu\text{H}$ |







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